

Briefing on Offshore Fracking and Other Well Stimulation Treatments

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Briefing Materials:

- Correspondence and the Power Point presentations posted on the Coastal Commission home page, <http://coastal.ca.gov/> scroll down to “*New and Notable*” materials.



Briefing Outline

- Introduction
- Presentation by Jason Marshall, Chief Deputy Director of California Department of Conservation
- Potential impacts of well stimulation treatments
- State Waters
- Federal Waters
- Future Outlook

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Well Stimulation Treatments

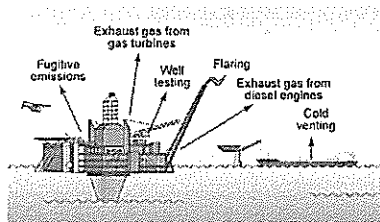
- **SB 4 Definition of “well stimulation”:**

“Treatment of a well designed to enhance oil and gas production or recovery by ***increasing the permeability*** of a formation”
- **Covered Treatments:**
 - Hydraulic fracturing – Injection of fluid at high pressure, sufficient to fracture reservoir rock
 - Acid matrix stimulation – Injection of acid solution to dissolve reservoir rock, at low pressure (no fracturing)
 - Acid fracturing – Combination treatment; injection of acid solution at fracking pressures

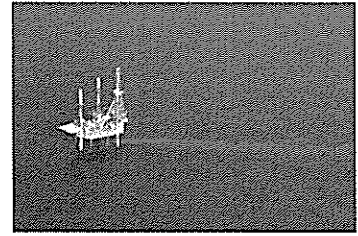
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Potential Environmental Impacts of Offshore Well Stimulation Treatments

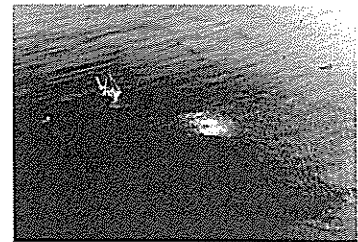
- Discharge of contaminants to the ocean
- Migration of contaminants into groundwater (onshore, nearshore areas)
- Well integrity, leaks & spills
- Induced seismicity
- Air Quality & GHGs
- Other Impacts



Potential sources of emissions from offshore platforms



Discharge plume from offshore platform, Gulf of Mexico
(Source: E. Sisskin, Southern Alliance for Clean Energy)



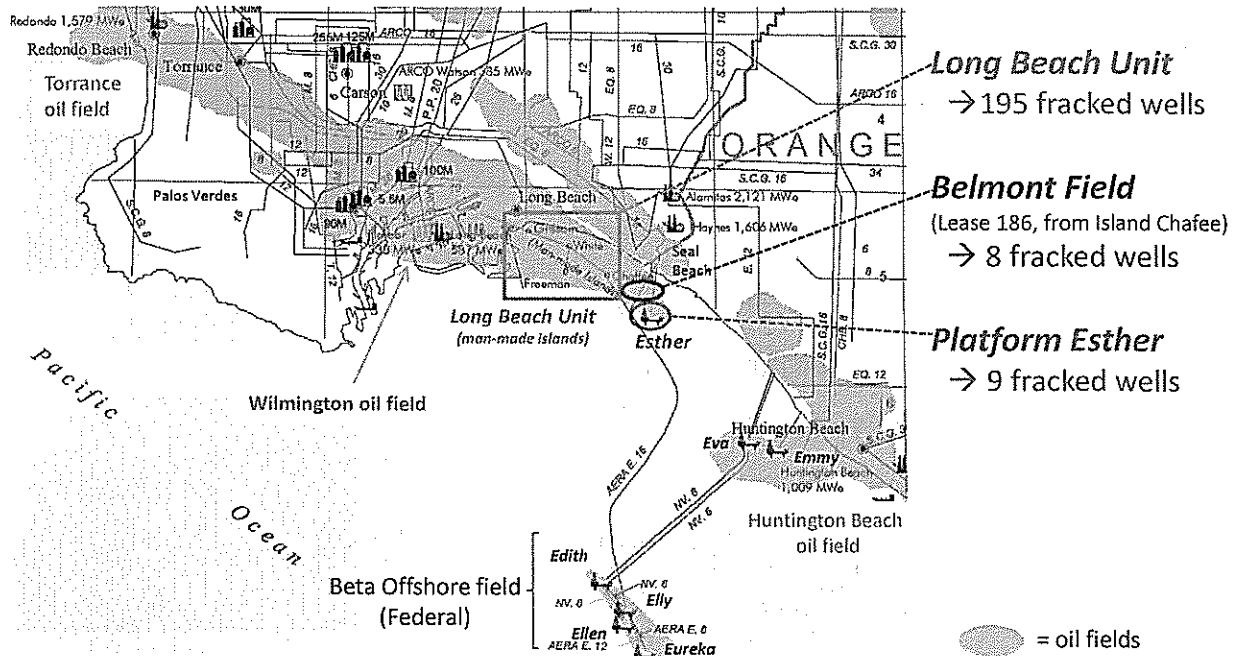
Oil spill, Platform A, 1969
(Source: University of California, Santa Barbara)

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Can the Coastal Commission Impose a Ban or Moratorium on Fracking?

- The Coastal Commission reviews development on a **case-by-case basis** and does not review entire categories of development.

Hydraulic Fracturing in State Waters (since 1994)



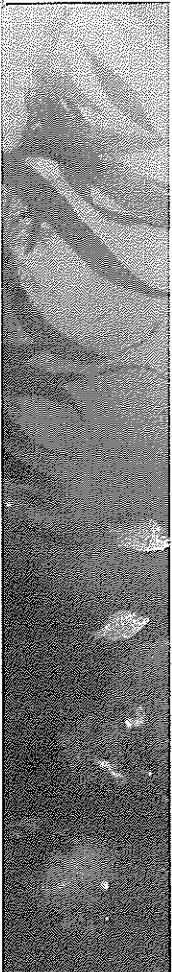
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State Waters – Jurisdiction

New Oil & Gas Drilling Projects

- Require a Coastal Development Permit (CDP)
- Coastal Commission will evaluate potential impacts of well stimulation treatments as part of CDP application review.

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State Waters – Jurisdiction

Existing Facilities:

- Well stimulation treatments at existing, pre-Coastal Act facilities
 - Complex legal issues
 - Staff reviews CDP Exemptions
 - On-going discussion and coordination with state and local agencies, stakeholders
- Report back to Coastal Commission at future hearing

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State Waters – Next Steps

- Enter into a Memorandum of Agreement (MOA) with Department of Conservation to delineate respective authorities, responsibilities, notification and reporting requirements associated with well stimulation treatments
- Participate in SB 4 Independent Scientific Study (“SB 4 Science Study”)
- Urge that SB 4 Science Study and Statewide EIR analyze potential impacts of offshore well stimulation treatments
- Schedule a Coastal Commission workshop after the release of the SB 4 Science Study to examine results and next steps

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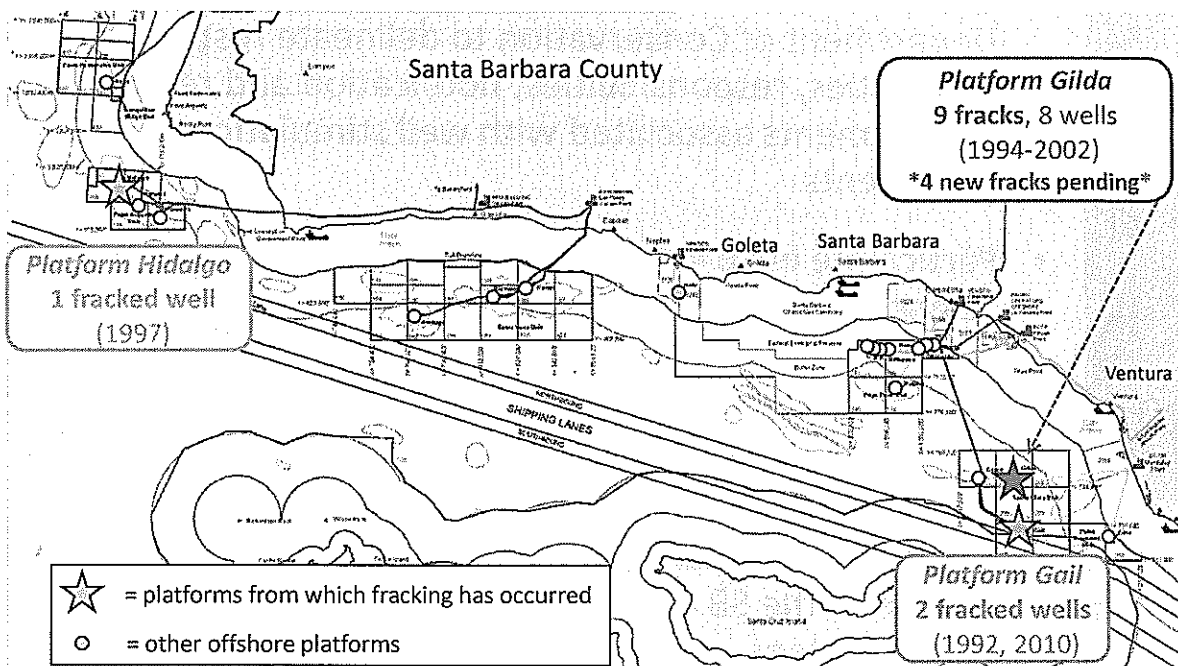
State Waters – *Discharges Prohibited*

- State Law (PRC § 6873(b) & SLC regulations) prohibits the discharge of produced fluids in state waters
- Most waste fluids **reinject**ed into originating reservoir
 - Co-located injection & waste disposal wells
 - “Closed loop” operations at sites where well stimulation treatments currently occur (Long Beach Unit, Platform Esther, Belmont Field)

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Hydraulic Fracturing in Federal Waters

- 23 offshore platforms
- 12 confirmed instances of fracking
- 4 approved but pending plans to frack
- Confirmed use of acid stimulation



Source: BSEE/BOEM, 2013

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Federal Waters - Jurisdiction

- CZMA → state review of federal activities (Federal Consistency)
- Offshore oil and gas development:
 - OCS Plans (BSEE & BOEM, formerly MMS)
 - Initial approval of OCS plan
 - Significant amendments/revisions
 - NPDES Permit (EPA) – reauthorized every 5 years



In both cases, the “reopener clause” allows CCC to request further *coordination* and/or *remedial action*, in the event of “changed circumstances” that lead to a project being “no longer consistent” with the CCMP

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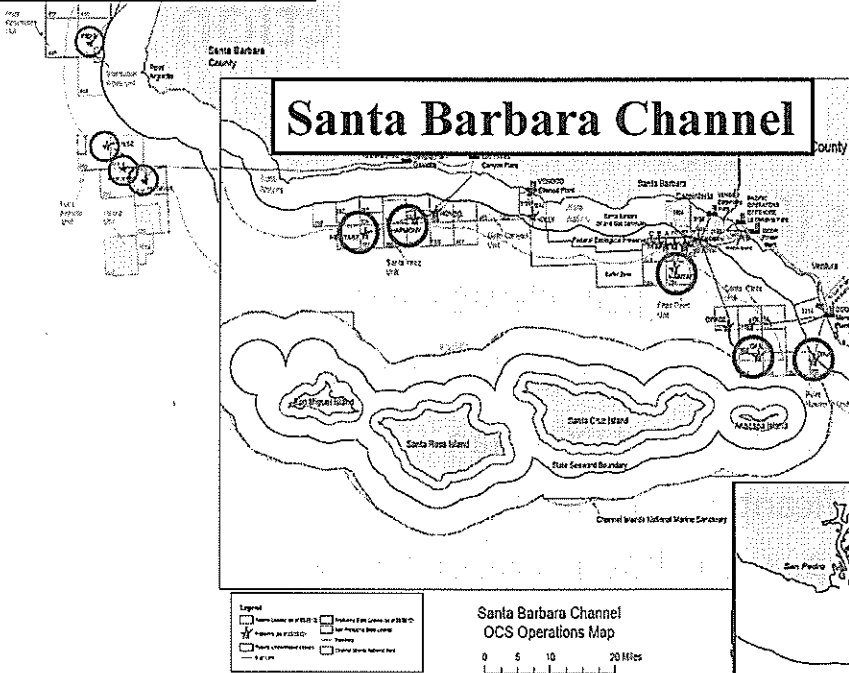


Federal Waters: OCS Plans

- An OCS plan authorizes exploration and development of oil and gas resources located in the OCS
- The CCC has reviewed consistency certifications for 11 OCS Production Platforms
- The other 12 were approved prior to the Commission’s consistency authority

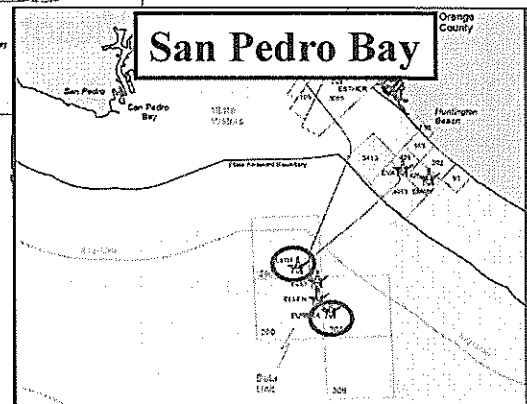
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Santa Maria Basin



Red Circles Denote
Where CCC Reviewed
OCS Plan

BOEM
BUREAU OF OCEAN ENERGY MANAGEMENT
201 625 0112



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Federal Waters: OCS Plans

How are well stimulation treatments handled currently?

- Once an operator has an approved OCS plan, drilling at each well is regulated through additional permits.
- Generally, operators have applied to frack under one of these permits.
- Historically, BSEE has not considered these permits to constitute revisions to the OCS plan



Federal Waters: OCS Plans

Next Steps:

1. Request notification of applications including well stimulation treatments
2. Determine whether a well stimulation treatment is covered under an approved OCS Plan OR triggers the need for a Supplemental OCS Plan
3. If not covered, work with BOEM to require a revision or supplement to the OCS plan
4. If covered, can request remedial action based on changed circumstances (i.e., reopener)

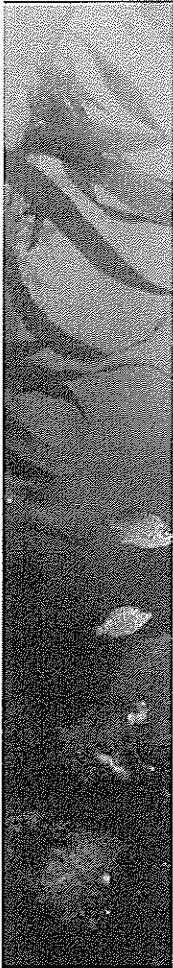
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Federal Waters: NPDES Permit

- General NPDES permit for oil and gas platforms establishes discharge standards for offshore platforms in federal waters
 - Reauthorized every five years
 - Applies only to discharges into federal waters
 - 13 platforms discharge
 - 10 platforms either reinject or commingle wastewater with one of the platforms that does discharge

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Federal Waters: NPDES Permit

How is the EPA addressing well stimulation treatments?

➤ Chemical Inventory Requirement:

“Chemical Inventory. The Permittee shall maintain an inventory of the quantities and concentrations of the specific chemicals used to formulate well treatment, completion and workover fluids. If there is a discharge of these fluids, the chemical formulation (including the concentrations for each chemical used) and discharge volumes of the fluids shall be submitted with the DMR. For discharges of well treatment, completion and workover fluids, the type of operation that generated the discharge fluids shall also be reported. ”

- Only applies if there is a discharge
- Reported quarterly in publicly available document (but EPA can request this information at any time)

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Federal Waters: NPDES Permit

Chemical Inventory:

- Important first step
- Not adequate to ensure consistency with the marine resource protection policies of the Coastal Act

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Federal Waters: NPDES Permit

Next Steps:

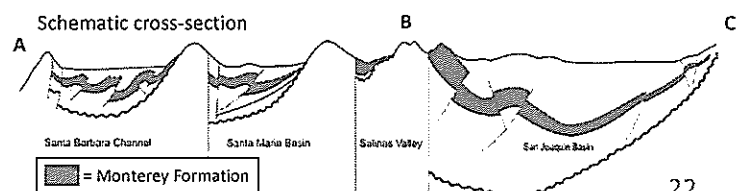
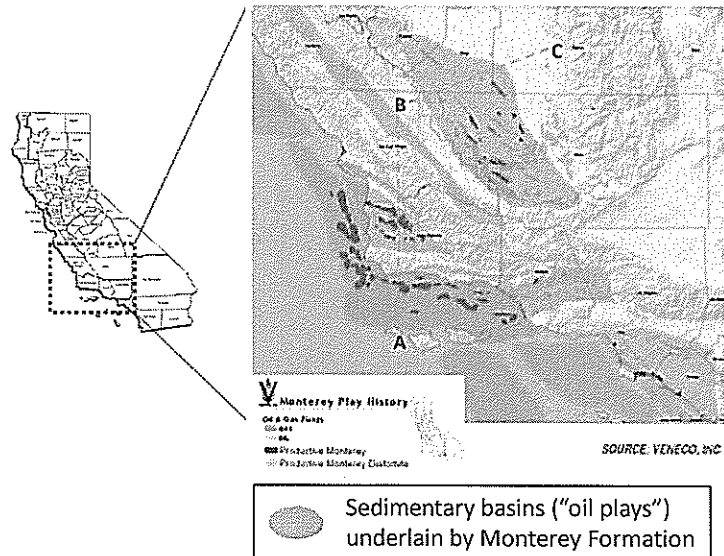
- Urge EPA to modify its permit to require operators that plan to discharge following a well stimulation treatment to provide for additional Commission review. Allows case-by-case analysis of well stimulation treatments.

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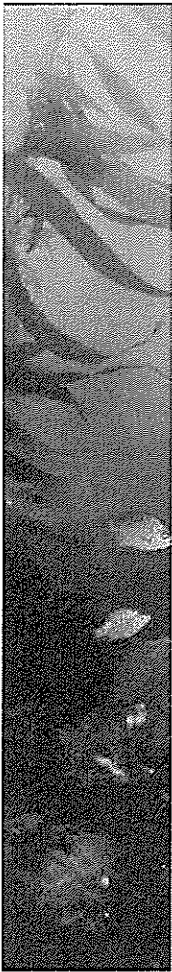
Monterey Shale – *The Future of Well Stimulation Treatments in California?*



Monterey Formation outcrops near Shell Beach
Photos by Rick Behl, CSU Long Beach,
Dept. of Geological Sciences



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Agency Representatives Available to Answer Questions:

- **Liane Randolph**, *Deputy Secretary and Chief Counsel, California Natural Resources Agency*
- **Jennifer Lucchessi**, *Executive Officer, California State Lands Commission*
- **Chris Garner**, *Director, Long Beach Oil and Gas Department*